

In the Claims

Please amend the claims as follows.

1-14 (canceled).

15. (currently amended) A method for embolizing blood vessels, comprising:
injecting an ultrasonic radiation micro-bubble reagent into a blood vessel, the reagent consisting essentially of microbubbles, a carrier, and optionally a marking isotope combined with a targeting substance; and

irradiating said reagent with an ultrasonic wave in an area where embolus are desired to be formed.

16. (previously presented) The method of claim 15, wherein the irradiation causes said reagent to form blood vessel embolus in said area.

17. (previously presented) The method of claim 15, wherein the ultrasonic radiation is of a low frequency and a low energy.

18. (previously presented) The method of claim 17, wherein the low frequency ranges from about 20 to about 50kHz and the low energy comprises a power of about 0.3 to about 3W.

19. (previously presented) The method of claim 15, wherein the irradiation is performed for about 0.5 to about 60 minutes.

20. (previously presented) The method of claim 15, wherein the reagent is injected at a dose of about 1 to about 10 ml/kg.

21. (currently amended) A method for reducing the size of a tumor, the method comprising:

providing an ultrasonic radiation micro-bubble reagent in a vessel providing blood to the tumor, the reagent consisting essentially of microbubbles, a carrier, and optionally a marking isotope combined with a targeting substance; and

irradiating said reagent with ultrasonic radiation to cause said reagent to form blood vessel embolus.

22. (previously presented) The method of claim 21, wherein the reagent is injected at a dose of about 1 to about 10 ml/kg and the ultrasonic radiation is of a low frequency and a low energy.

23. (currently amended) A method for treating cancer, the method comprising:
providing an ultrasonic radiation micro-bubble reagent in a vessel providing blood to a tumor of the cancer, the reagent consisting essentially of microbubbles, a carrier, and optionally a marking isotope combined with a targeting substance; and

irradiating said reagent with ultrasonic radiation to cause said reagent to form blood vessel embolus.

24. (previously presented) The method of claim 23, wherein the reagent is injected at a dose of about 1 to about 10 ml/kg and the ultrasonic radiation is of a low frequency and a low energy.

25. (currently amended) A ultrasonic radiation carbon dioxide based micro-bubble reagent for causing embolus, the reagent comprising consisting essentially of microbubbles, a carrier, and optionally an isotope combined with a targeting substance, wherein the carrier comprises a large molecule substance Albunex, Optison, fluorocarbon micro bubble reagent, medical salt water base micro bubble reagent, fso69, SHU454, SHU508, QW3600, a carbon dioxide based reagent, or combinations thereof.

26. (canceled)

27. (currently amended) The reagent of claim 25 26, wherein the large molecule substance comprises blood, plasma, substitute blood, substitute plasma, Semi-lactose, Glucose, Lactose, Hetastarch, Human Serum Albumin, Dextran-70, Dextran-40, Dextran-10, Polygeline, Gelofusine, Poly-vidone or Dxypolygelatin.

28. (currently amended) The reagent of claim 25 26, wherein the carbon-dioxide gaseous based reagent is produced by adding carbon dioxide gas or liquid into a solution with the large molecule substance under pressure.

29. (currently amended) The reagent of claim 25 26, wherein the carbon-dioxide gaseous based reagent is produced by reacting an organic acid and NaHCO₃.

30. (previously presented) The reagent of claim 29, wherein the organic acid comprises vitamin C, lactic acid, citric acid, amber acid, tartar acid, lactose acid, semi-lactose acid, glucose acid, amino glucose acid, amino acid, or combinations thereof.

31. (currently amended) The reagent of claim 25, further comprising wherein the isotope comprises a marking or tracing isotope combined with a targeting substance.

32. (previously presented) The reagent of claim 31, wherein the combined marking or tracing isotope with a targeting substance comprises: ¹²⁵I, ¹²³I, ^{99m}Tc (^{99m}Tc-PYP, etc), ¹¹¹In, ¹¹C, ¹⁸F, ¹³N, and ⁸²Rb, wherein the natural occurring positron integration element is a positron integration radioactive nuclide such as ¹¹C, ¹³N, ¹⁵O, ¹⁸F; ³²P, ³⁵S, ¹⁹⁸Au, ^{99m}Tc, (^{99m}Tc-PYP, etc...), ¹¹¹In, ¹²⁵I, ¹³¹I, ¹⁵³Sm—EDTMP β-injection treatment substance, ⁹⁰Y—GTMS, ⁸⁹SrCl₂, or a combination thereof.

33. (previously presented) The reagent of claim 31, wherein the targeting substance combined with the isotope includes: Human Serum Albumin (99m Tc-MAA), floral sodium, Colloid 113m In, Marking Erythrocyte, EHIDA, 99m Tc-PMT, 131 I-rose, DTPA, EHIDA, 99m Tc-DMSA, calcium gluconate, O-iodohippuric acid, molecular nucleus medical sole clone antibody, oncogene antisense oligonucleotides, or combinations thereof.

34. (previously presented) A medical device for forming capillary vessel embolus, comprising:

- an embolizing agent injecting portion;
- a positioning portion; and
- an ultrasonic treating portion.

35. (previously presented) The device of claim 34, wherein the embolizing agent injecting portion injects an ultrasonic micro-bubble imaging reagent.

36. (previously presented) The device of claim 34, wherein the positioning portion positions the device to the location where capillary blood vessel embolus needs to be formed.

37. (previously presented) The device of claim 34, wherein the ultrasonic treatment portion comprises an ultrasonic energy output head with an energy and output frequency of about 20 to about 50kHz and an output power of about 1 to about 100W.

38. (previously presented) The device of claim 36, wherein the local positioning portion is a an B Ultrasonic or X-Ray, CT or ECT.

39. (withdrawn) An ultrasonic treatment head for a device for forming capillary vessel embolus, the head comprising:

- a metal treating head;
- an electrode patch;
- a ceramic patch;
- a range change rod;

a counter weight;
a power route;
a handler;
a terminal; and
a covered water purse.

40. (withdrawn) The treatment head of claim 39, wherein it is hand-held apparatus.

41. (withdrawn) The treatment head of claim 39, wherein said head protrudes from the terminal, the water purse covers the terminal, and the water purse is made of latex.

42. (withdrawn) The treatment head of claim 39, further comprising a drainage connection on the terminal.